

CLAIMS

1. A method of attaching a steel railway rail support to a ductile iron rail clip anchoring device, which
5 method comprises:
 inserting a boss, protruding from the bottom of a body of the anchoring device, into a hole passing through the support at a location on its surface at which the anchoring device is to be attached until the
10 anchoring device body abuts the support surface; and
 compressing the steel around the hole in a region on the support surface opposite to that on which the anchoring device body is located, while the anchoring device is held in place, so that the compressed steel
15 flows plastically against the boss within the hole, until the force thereby applied to the boss brings about elongation thereof, whereby the boss undergoes an elastic set which clamps the boss to the support.
- 20 2. A method as claimed in claim 1, wherein the boss is provided with at least one recess in its flank and the compressed steel also flows plastically into the said recess.
- 25 3. A method as claimed in claim 2, wherein the recess comprises a single non-helical groove extending around the boss.
- 30 4. A method as claimed in claim 2, wherein the flank of the boss is provided with a plurality of recesses, each comprising a non-helical groove extending around the boss.

5. A method as claimed in any preceding claim,
wherein the step of compressing the steel around the
hole is performed by applying a penetrating tool,
having a working face of a desired shape, to the
5 surface of the support opposite to that on which the
anchoring device body is located until the tool has
entered the support surface for a desired distance.

6. A method as claimed in claim 5, wherein the said
10 penetrating tool is shaped to allow the said elongation
of the boss.

7. A method as claimed in any preceding claim,
wherein the step of inserting the boss into the hole in
15 the support is performed by supporting the anchoring
device so that the boss extends upwardly and then
lowering the support such that the boss passes through
the hole.

20 8. A method as claimed in any preceding claim,
wherein the support is provided with two such holes and
the method is carried out simultaneously with respect
to both holes thereby to attach two anchoring devices
to the support.

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9. A method as claimed in any preceding claim,
wherein the said hole or holes are punched into the
steel support.

30 10. A method as claimed in any one of claims 1 to 9,
wherein the said railway rail support is a railway
sleeper.

11. A method as claimed in any one of claims 1 to 9, wherein the said railway rail support is a railway rail baseplate.

5 12. A rail clip anchoring device, for use with the method of any preceding claim, which device has an anchoring device body and, protruding from the bottom of that body, a boss provided with at least one recess in its flank, the recess comprising a single non-
10 helical groove extending around the boss.

13. A device as claimed in claim 12, wherein the flank of the boss is provided with a plurality of such recesses.

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14. A device as claimed in claim 12 or 13, wherein the profile of the or each groove is substantially that of a buttress thread.

20 15. A device as claimed in any one of claims 12 to 14, wherein the or each recess is provided adjacent a free end of the boss.

16. A railway rail fastening assembly comprising a
25 steel railway rail support, having two holes therethrough, and two ductile iron rail clip anchoring devices, each anchoring device having an anchoring device body and, protruding from the bottom of that body, a boss which extends into a respective one of the
30 said holes in the support, the boss of each anchoring device having an elastic set whereby the boss is clamped to the support, wherein the boss of at least one of the anchoring devices has at least one recess

provided in its flank, the recess comprising a single non-helical groove extending around the boss.

17. An assembly as claimed in claim 16, wherein the
5 flank of the boss is provided with a plurality of such recesses.

18. An assembly as claimed in claim 16 or 17, wherein
the profile of the or each groove is substantially that
10 of a buttress thread.

19. An assembly as claimed in any one of claims 16 to
18, wherein the or each recess is provided adjacent a
free end of the boss.

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20. An assembly as claimed in any one of claims 16 to
19, wherein the said railway rail support is a railway
sleeper.

20 21. An assembly as claimed in any one of claims 16 to
19, wherein the said railway rail support is a railway
rail baseplate.